STATEMENT OF BASIS

Unimin Lime Corporation
Calera Plant
Calera, Alabama
Shelby County
Facility No. 411-0054

This proposed Title V Major Source Operating Permit renewal is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

RENEWAL NOTES

1. On August 16, 2010, the Department approved installation of a Selective Non-Catalytic Reduction (SNCR) System on the rotary lime kiln. No modification of Major Source Operating Permit (MSOP) No. 411-0054 was deemed necessary for this project.

2. On April 28, 2009, revisions to 40 CFR 60, Subpart OOO, "*Standards of Performance for Nonmetallic Mineral Processing Plants*" were promulgated. These revisions, and any applicable requirements associated with them, have been addressed in this document.

3. On October 8, 2009, revisions to 40 CFR 60, Subpart Y, "*Standards of Performance for Coal Preparation and Processing Plants*" were promulgated. These revisions, and any applicable requirements associated with them, have been addressed in this document.

4. On November 27, 2007, MSOP No. 411-0054 was changed from Peak Lime, Inc. to Unimin Lime Corporation.

5. On January 5, 2004, 40 CFR 60, Subpart AAAAA, "*National Emissions Standards for Hazardous Air Pollutants for Lime Manufacturing Facilities*" was promulgated. The applicable requirements associated with Subpart AAAAA have been addressed in this document.

FACILITY DESCRIPTION

Unimin Lime Corporation is an existing lime manufacturing facility located in Calera, Shelby County, Alabama. One (1) rotary lime kiln with associated finished material storage, screening, handling, and loading are currently located at the facility. The plant is comprised of the following processes:

Area 100 Stone Processing Plant

Area 600 Lime Plant Area

Area 700 Solid Fuel Handling & Storage System

This plant is major source of particulate matter [PM], nitrogen oxides [NO_x], sulfur dioxide [SO_2], and carbon monoxide [CO] emissions with respect to both Title V and PSD regulations. Additionally, Unimin Lime Corporation has performed HCl emissions testing to prove that it is a minor source with respect to 40 CFR 63, Subpart AAAAA, "*National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants.*"

Unimin Lime Corporation currently holds Major Source Operating Permit (MSOP) No. 411-0054 which was initially issued on October 25, 2000, and renewed on December 27, 2006. The MSOP renewal application was due to the Department by April 23, 2010, and was received by the Department on April 22, 2010.

Raw material (primarily limestone) is retrieved from the neighboring cement plant's quarry. The material is then transported to Unimin's Stone Processing Plant and placed in stockpiles for storage prior to processing in the lime plant. After processing, the crushed limestone is transferred and fed to the lime kiln as needed.

The Stone Processing Plant includes four limestone stockpiles and two crushers. No control devices are used in the stone processing plant; however water sprays are used to aid in fugitive dust prevention from both crushers.

This area is comprised of the following sources:

Table 1

Source	Description	Control Device	Emission Point
SI100	Limestone Stockpiles	None	FUG
SI101			
FE102	Tunnel No. 109 Limestone Hoppers	None	FUG
FE103			
FE104			
FE105			
FE106			
FE107			
BC108	Tunnel No. 109 Belt Conveyor	None	FUG
BC110	Belt Conveyor	None	FUG
VS112	Primary Scalping Screen	None	FUG
BC132	Belt Conveyor	None	FUG
BN114	Primary Crusher Stone Bin	None	FUG
FE116	54" Vibratory Feeder	Water Spray	FUG
CR118	84" Primary Cone Crusher	None	FUG
BC113	Belt Conveyor	None	FUG
BC120	Belt Conveyor	None	FUG
DV122	Diverter Valve	None	FUG
VS124	Primary Screens	None	FUG

Source	Description	Control Device	Emission Point
VS125			
BC127	Belt Conveyor	None	FUG
BC128	Belt Conveyor	None	FUG
DV126	Diverter Valve	None	FUG
BC131	Belt Conveyor	None	FUG
DV129	Diverter Valve	None	FUG
DV130	Diverter Valve	None	FUG
VS140	8 x 20 Secondary Screens	None	FUG
VS142			
VS144			
VS146			
BC148	Belt Conveyor	None	FUG
BC150	Belt Conveyor	None	FUG
BC152	Belt Conveyor	None	FUG
DV153	Diverter Valve	None	FUG
BC159	Belt Conveyor	None	FUG
BC154	Belt Conveyor	None	FUG
BC156	Belt Conveyor	None	FUG
DV157	Diverter Valve	None	FUG
BC158	Belt Conveyor	None	FUG
SI160	Screens	None	FUG
SI164			
SI168			
SI172			
FE161	Tunnel No. 176 Stone Feeders	None	FUG
FE162			
FE163			
FE165			
FE166			

Source	Description	Control Device	Emission Point
FE167			
FE169			
FE170			
FE171			
FE173			
FE174			
FE175			
BC176	Tunnel No. 176 Belt Conveyor	None	FUG
DV177	Diverter Valve	None	FUG
BC178	Belt Conveyor	None	FUG
DV179	Diverter Valve	None	FUG
BC180	Belt Conveyor	None	FUG
VS182	Screen	Water Spray	FUG
SC184	Screen Reject Screw	None	FUG
BC186	Belt Conveyor to 3/8” Stockpile	None	FUG
BC188	Belt Conveyor	None	FUG
BC190	Belt Conveyor to Preheater Stone Bin (BN801)	None	FUG

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, "*Major Source Operating Permits*".

- This source is subject to ADEM Admin. Code r. 335-3-4-.02 *"Control of Particulate Emissions – Fugitive Dust and Fugitive Emissions"*.

- This source is subject to the applicable provisions of 40 CFR Subpart OOO, "*Standards of Performance for Nonmetallic Mineral Processing Plants*."

Emission Standards:

- Opacity

  - Precautions shall be taken to prevent fugitive dust from emanating from stockpiles, transfer points, conveyors, feeders, hoppers, and any other equipment within the Stone Processing Plant. (ADEM Admin. Code. r. 335-3-4-.02)

  - Fugitive PM emissions discharged to the atmosphere from the secondary crushers associated with this process shall not exceed greater than 15% opacity as required by §60.672(b) of 40 CFR 60 Subpart OOO. *(§60.672(b) Subpart OOO)*

  - Fugitive PM emissions discharged to the atmosphere from any transfer point within the Stone Processing Plant shall not exceed greater than 10% opacity as required by §60.672(b) of 40 CFR 60 Subpart OOO.(*§60.672(b) Subpart OOO)*

Cam Analysis:

- CAM does not apply to the units associated with this source since no control devices are used to meet any applicable emissions limitations.

Expected Emissions:

The maximum expected emissions, based on AP-42 emissions factors, are as follows:

Table 2

Pollutant	Allowable Emissions		Expected Emissions	
	(lb/hr)	(TPY)	(lb/hr)	(TPY)
PM	N/A	N/A	1.2	5.26

Compliance and Performance Test Methods and Procedures:

- Instantaneous visible emissions observations (VEO) shall be conducted in accordance with Method 22 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

- Visible emission observations (VEO) shall be conducted in accordance with Method 9 of 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

Emission Monitoring:

- The opacity emissions from this source shall be monitored in accordance with the following (ADEM Admin. Code r. 335-3-16-.05(c)(1):

- An instantaneous visible emissions observation shall be conducted at least weekly during daylight hours on each stone plant transfer point and crusher.

- If any visible emissions are observed during the initial visible emissions observation, corrective action shall be initiated within two (2) hours.

- After corrective action has been complete, a follow-up instantaneous visible emissions observation shall be conducted in order to ensure that no visible emissions are present.

Recordkeeping and Reporting Requirements:

- Records documenting the observation date, observation time, emission point designation, name of observer, expiration date of observer's certification, observed opacity, and any corrective actions taken during each visible emissions observation shall be kept in a permanent form suitable for inspection. These records shall be maintained for a period of at least five (5) years from the date of generation and shall be made available to the permitting authority upon request. (ADEM Admin. Code r. 335-3-16-.05(c)(2))

- If a visible emissions observation utilizing Method 9 is required, the results shall be documented using a visible emissions observation report form. These records shall be maintained for a period of at least five (5) years from the date of generation and shall be made available to the permitting authority upon request. (ADEM Admin. Code r. 335-3-16-.05(c)(2))

Limestone is transferred from the Stone Processing Plant into the Lime Kiln. The lime kiln is equipped with a preheater tower in which the kiln feed is preheated with kiln exhaust gas. The limestone is fed on the high end of the kiln, while the fuel is fed on the low end, and the two flow countercurrent to each other. The product, quicklime, is cooled in the Lime Cooler Area. Lime from the kiln may also be further processed into hydrated lime in the Lime Hydrator. The product is then transferred (from either the Lime Cooler of the Lime Hydrator) to silos where it is loaded in bulk to railcars and/or trucks.

Particulate emissions from the Lime Kiln are controlled by a baghouse which is equipped with a continuous opacity monitor. A selective non-catalytic reduction (SNCR) system is used on the kiln to control NO_X emissions. The lime kiln dust from the lime kiln's baghouse is stored in the Lime Kiln Dust Tank and is primarily recycled in the neighboring cement plant. Dust collectors are used to control particulate matter emissions from the other sources within the Lime Plant. Particulate matter, sulfur dioxide, nitrogen oxides, and carbon monoxide are the emissions of significance emitted by the Lime Kiln. All other sources within the Lime Plant are only expected to emit particulate matter emissions.

This area is comprised of the following sources:

Table 3

Emission Point #	Description
600	Lime Kiln
601	Lime Cooler Area
602	Lime Kiln Dust Tank
603	Kiln Discharge Area
604	Bucket Elevator (Top Area)
605	Product Screens Area
606	Silo Penthouse Area
607	Lime Kiln Run Silo
608	Rejects Bin
609	Product Silos
610	Product Silos Reclaim
611	Reclaim Elevator Discharge
612	Reclaim Screen Area
613	Lime Storage Bin 8

Emission Point #	Description
615	Storage Bins 9 & 10
616	Bin 9 & 10 Truck Feeders
617	Bin 9 & 10 Rail Feeders
618	Truck Loading
619	Rail Loading
620	Lime Fines Storage Tanks
621	Lime Hydrate System
622	Lime Hydrator
623	Ball Mill Cyclone & Air Separator System
624	Hydrate Load-out Spout
625	West Bulk Loadout Tank
Area 600	All sources except the Lime Kiln (600)

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, "*Major Source Operating Permits*".

- This source is subject to ADEM Admin. Code r. 335-3-4-.04 (1), "*Control of Particulate Emissions for Process industries – General*".

- This source is subject to ADEM Admin. Code r. 335-3-4-.01 (1), "*Control of Particulate Emissions – Visible Emissions*".

- This source has enforceable limits in place in order to prevent it from being subject to the provisions of ADEM Admin. Code R. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]".*

- The Lime Kiln (600) is subject to the applicable requirements of 40 CFR 60 Subpart HH, *"Standard of Performance for Lime Manufacturing Plants."*

- This source has enforceable limits in place in order to prevent it from being subject to the provisions of 40 CFR 63 Subpart AAAAA, "*National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants.*"

- The Lime Kiln is subject to 40 CFR 64, "*Compliance Assurance Monitoring*." Pre-control potential particulate matter emissions exceed 100 TPY.

Emission Standards:

- Opacity

  - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During on six (6) minute period a person may discharge into the atmosphere from any source of forty (40%) percent opacity,

  OR

  - Visible emissions (VE) discharged from the Lime Kiln shall not exceed 15%, as determined by a 6-minute average as required by §60.342(a)(2) of 40 CFR 60 Subpart HH. *(§60.342(a)(2) Subpart HH)*

- Particulate Matter

  - ADEM Admin Code r. 335-3-4-.04(1) states no person shall cause or permit emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

    $E = 3.59\ (P)^{0.62}$ (P less than 30 tons per hour)

    $E = 17.31\ (P)^{0.16}$ (P greater than 30 tons per hour)

    Where E = Emissions in pounds per hour

    P = Process weight per hour in tons per hour

    The Lime Kiln Dust Tank (602), Storage Bins 9 & 10 (615), the Lime Hydrate System (621), and the Lime Hydrator (622), each shall not discharge to the atmosphere particulate matter emissions in excess of the emissions determined by ADEM Admin Code r. 335-3-4-.04(1), *"Process Weight Equation"*.

  - PM from the Lime Kiln (600) must not discharge to the atmosphere particulate matter emission in excess of 0.60 lb/ton of stone feed as required by §60.342(a)(1) of 40 CFR 60 Subpart HH. *(§60.342(a)(1) Subpart HH)*

  - The sources listed below shall not discharge to the atmosphere particulate matter emissions in excess of 0.02 gr/acf and those values which are listed as follows: (*ADEM Admin. Code R. 335-3-14-.04) Anti PSD*

Table 4

Emission Point #	Description	Emission Limit (lb/hr)
EU 600	Lime Kiln	34.5 lb/yr (151.1 TPY)
EU 601	Lime Cooler Area	0.77
EU 603	Kiln Discharge Area	1.54
EU 604	Bucket Elevator (Top Area)	1.37
EU 605	Product Screens Area	1.71
EU 606	Silo Penthouse Area	1.03
EU 607	Lime Kiln Run Silo	1.03
EU 608	Reject Bin	0.42
EU 609	Product Silos	1.20
EU 610	Product Silos Reclaim	1.20
EU 611	Reclaim Elevator Discharge	0.86
EU 612	Reclaim Screen Area	1.29
EU 613	Lime Storage Bin 8	0.26
EU 616	Bin 9 & 10 Truck Feeders	0.6
EU 617	Bin 9 & 10 Rail Feeders	0.55
EU 618	Truck Loading	1.29
EU 619	Rail Loading	1.29
EU 620	Lime Fines Storage Tanks	0.42
EU 623	Ball Mill Cyclone & Air Separator System	1.37
EU 624	Hydrate Loadout Spout	1.03
EU 625	West Bulk Loadout Tank	0.51

- Sulfur Dioxide

    - Sulfur Dioxide from the Lime Kiln must not discharge to the atmosphere emissions in excess of 3.29 lb/ton of lime produced and 692 tons per rolling 12-month period as required by ADEM Admin. Code r. 335-3-14-.04 (Anti-PSD).

    - The production of lime in the Lime Kiln shall not exceed 420,000 tons in any consecutive 12-month period (ADEM Admin. Code r. 335-3-14-.04, Anti PSD).

    - The sulfur dioxide removal efficiency, based on the comparison of the sulfur content of the inlet fuel and the sulfur dioxide emission rate, shall be 84% or greater. (ADEM Admin. Code r. 335-3-16-.05(c), ADEM Admin Code r. 335-3-14-.04)

    - The sulfur content of the fuel blend delivered to the Lime Kiln burner shall not exceed 3.0%. (ADEM Admin. Code r. 335-3-16-.05(c), ADEM Admin Code r. 335-3-14-.04)

- Nitrogen Oxides

    - Nitrogen Oxides from the Lime Kiln must not discharge to the atmosphere emissions in excess of 3.20 lb/ton of lime produced and 672 tons per rolling 12-month period as required by ADEM Admin. Code r. 335-3-14-.04 (Anti-PSD).

- Carbon Monoxide

    - Carbon Monoxide from the Lime Kiln must not discharge to the atmosphere emissions in excess of 1.65 lb/ton of lime produced and 346 tons per rolling 12-month period as required by ADEM Admin. Code r. 335-3-14-.04 (Anti-PSD).

- Hazardous Air Pollutants

    - The Lime Kiln shall not discharge to the atmosphere HCl emissions in excess of 0.045 lb/ton of lime produced (9.5 TPY).

    - The Lime Kiln shall not discharge to the atmosphere any single HAP in excess of 9.5 TPY or any combination of total HAPs in excess of 24.5 TPY.

      <u>40 CFR 63</u> (MACT avoidance 40 CFR 63 Subpart AAAAA)

<u>Cam Analysis:</u>

- CAM is applicable to the Lime Kiln for particulate matter, since the kiln has the pre-controlled potential to emit particulate matter emissions greater than 100 TPY, and a baghouse is used to control said emissions from the kiln. All other pollutants from the kiln do not use a control device to meet a limit. Therefore, CAM does not apply to any other pollutant for the Lime Kiln. Currently, Unimin conducts annual particulate emissions tests. In addition, Unimin utilizes a continuous opacity monitoring system (COMS), which is a monitoring approach approved by the Lime MACT (40 CFR 63 Subpart

AAAAA) a post November 15, 1990 standard. The monitoring requirements prescribed in the Lime MACT, according to 40 CFR §64.4, meets the requirements of "presumptively acceptable monitoring". This has been determined to be sufficient for CAM for the Lime Kiln. No other source associated with the Lime Plant (Area 600) has the pre-controlled potential to emit particulate matter emissions in quantities greater than 100 TPY; therefore, CAM does not apply to any other source within the Lime Plant (Area 600).

Compliance Assurance Monitoring Plan for Emission Unit 600 (Lime Kiln)

	Indicator 1
I. Indicator	Opacity (Measured with a Continuous Opacity Monitor)
II. Indicator Range	Opacity should be 15% or less. Inspection of baghouse is prompted if outside this range for more than 5 consecutive 6-minute periods.
III. Performance Criteria A. Data Representativeness	 The COMS is located at the baghouse outlet. The system has a minimum accuracy of +/- 3% over the range of the monitor.
B. Verification of Operation Status	N/A
C. QA/QC Practices & Criteria	Calibrate and maintain in accordance with manufacturer's specification and 40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specification I requirements.
D. Monitoring Frequency Data Collection Procedures Averaging Period	 Continuously recorded electronically 6-minute averages

Expected Emissions:

The maximum expected emissions, based on AP-42 emissions factors, are as follows:

Table 5

Emission Point #	Description	Pollutant	Expected Emissions (lb/hr unless otherwise noted)
EU600	Lime Kiln	PM	**25.69**
		PM	**0.286 lb/ton**
		SO_2	**0.82 lb/ton**
		NO_x	**2.29 lb/ton**

Emission Point #	Description	Pollutant	Expected Emissions (lb/hr unless otherwise noted)
		CO	**0.38 lb/ton**
		HCl	**.45 lb/ton**
EU601	Lime Cooler Area	PM	**.77**
EU602	Lime Kiln Dust Tank	PM	**0.40**
EU603	Kiln Discharge Area	PM	**1.54**
EU604	Bucket Elevator	PM	**1.37**
EU605	Product Screens Area	PM	**1.71**
EU606	Silo Penthouse Area	PM	**1.03**
EU607	Lime Kiln Run Silo	PM	**1.03**
EU608	Rejects Bin	PM	**0.42**
EU609	Product Silos	PM	**1.20**
EU610	Product Silos Reclaim	PM	**1.20**
EU611	Reclaim Elevator Discharge	PM	**0.86**
EU612	Reclaim Screen Area	PM	**1.29**
EU613	Lime Storage Bin 8	PM	**0.26**
EU615	Storage Bins 9 & 10	PM	**0.9**
EU616	Bin 9 & 10 Truck Feeders	PM	**0.6**
EU617	Bin 9 & 10 Rail Feeders	PM	**0.55**
EU618	Truck Loading	PM	**1.29**
EU619	Rail Loading	PM	**1.29**
EU620	Lime Fine Storage Tanks	PM	**0.42**
EU621	Lime Hydrate System	PM	**3.42**
EU622	Lime Hydrator	PM	**0.28**
EU623	Ball Mill Cyclone & Air Separator System	PM	**1.37**
EU624	Hydrate Loadout Spout	PM	**1.03**
EU625	West Bulk Loadout Tank	PM	**0.51**

Allowable emissions can be found in Table 4

Compliance and Performance Test Methods and Procedures:

- Particulate Matter (PM) emissions test shall be conducted in accordance with Method 5 of 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

- Sulfur Dioxide (SO_2) emissions test shall be conducted in accordance with Method 6 of 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05)

- The sulfur content of the fuel blend delivered to the kiln burner shall be measured in accordance with ASTM D4239-00. (ADEM Admin. Code r. 335-3-1-.05)

- Nitrogen Oxide (NO_X) emissions test shall be conducted in accordance with Method 7 or 7E of 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

- Carbon Monoxide (CO) emissions test shall be conducted in accordance with Method 10 of 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

- Emissions of HCl shall be determined by an EPA-approved reference method as stated in 40 CFR 63, Subpart AAAAA.

- Visible emission observations (VEO) shall be conducted in accordance with Method 9 of 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

- Instantaneous visible emissions observations (VEO) shall be conducted in accordance with Method 22 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

Emission Monitoring:

- The Permittee shall conduct a particulate matter emissions test for the Lime Kiln annually, at intervals not to exceed 12 months. (ADEM Admin. Code r. 335-3-16-.05(c))

- The Permittee shall calibrate, maintain, and operate a continuous opacity monitoring system (COMS) to measure the opacity from the Lime Kiln's baghouse exhaust. The COMS shall comply with performance specifications as stated in 40 CFR 60, Appendix B. (ADEM Admin. Code r. 335-3-16-.05(c))

- Should the visible emissions from the Lime Kiln exceed a 6-minute average of 15% opacity, as determined by the COMS, corrective measures shall be taken within 2 hours to reduce the visible emissions to below the 15% opacity standard. (ADEM Admin. Code r. 335-3-16-.05(c))

- Should the net opacity exceedances (as determined by the COMS) from the Lime Kiln exceed 5% of the total operating time of the Lime Kiln during any calendar quarter, the Department may require additional particulate matter emissions testing to be performed prior to the end of the next calendar quarter. (ADEM Admin. Code r. 335-3-16-.05(c))

- The SNCR shall be operated according to good engineering practices and shall be operated in a manner so as to control the emissions of NO_x while simultaneously minimizing excess ammonia (NH_3) emissions.

- The permittee shall install, operate, and maintain a system to continuously monitor and record reagent flow to the SNCR system. If the reagent monitoring system indicated that there is not reagent flow to the SNCR and the kiln system is in stable operation and the minimum process gas temperature for reagent injection has been reached, the permittee shall, within two hours, initiate corrective action to return the reagent injection system to

service to ensure the SNCR system is operational at least ninety (90) percent of available kiln operating time, not including period of startup, shutdown, or kiln malfunction.

- *For sources within this system that are controlled by air pollution control equipment:* The Permittee shall conduct a visual check of each emission point within the Lime Plant (Area 600), with the exception of the Lime Kiln at least once per week. If visible emissions greater than 15% are noted, a visible emissions observation in accordance with EPA Reference Method 9 shall be conducted within 1 hour of the initial observation of visible emissions. The Method 9 test shall be performed for at least 6 minutes. (ADEM Admin. Code r. 335-3-16-.05(c))

- *For sources within this system that are controlled by air pollution control equipment:* If the Method 9 test results is greater than 15% opacity, corrective action shall be initiated within 2 hours of the performance of the Method 9 test in order to reduce the emissions. After the corrective action has been completed, the Permittee shall perform another visual check to ensure the visible emissions have been reduced. If any Method 9 test results in greater than 20% opacity (as determined by a 6-minute average), the Department shall be notified within 24 hours (or 1 working day) of the performance of the Method 9 test. (ADEM Admin. Code r. 335-3-16-.05(c))

- *For sources within this system that are not controlled by air pollution control equipment:* The opacity of emissions from these sources shall be monitored in accordance with the following (ADEM Admin. Code r. 335-3-16-.05(c)):

    - Instantaneous visible emissions observation shall be conducted at least weekly during daylight hours while the affected source is in operation.

    - If any visible emissions are observed during the instantaneous visible emissions observation, a six (6) minute visible emissions observation shall be conducted in accordance with Method 9 of 40 CFR 60, Appendix A, within one (1) hour of the initial observation, unless the source is immediately shut down.

    - If any visible emissions are observed during the initial visible emissions observation, corrective action shall be initiated within two (2) hours.

    - After correction action has been completed, a follow-up instantaneous visible emissions observation shall be conducted in order to ensure that no visible emissions are present.

- A sample of the solid fuel blend delivered to the Lime Kiln burner shall be collected at least once per shift, and a composite of these samples shall be made once every 7 days. An analysis of this 7-day composite's sulfur content shall be made each week. (ADEM Admin. Code r. 335-3-16-.05(c))

- At least once prior to permit renewal, the sulfur dioxide removal efficiency, based on the comparison of the sulfur content to the inlet fuel and the sulfur dioxide emission rate, shall be determined for the Lime Kiln. (ADEM Admin. Code r. 335-3-16-.05(c))

- Nitrogen Oxides and Carbon Monoxide emissions test shall be conducted at least once prior to Permit renewal. During these emissions tests, the maximum fuel firing rate (3-hour averaging period) and the minimum O_2 level (3-hour averaging period) shall be recorded. (ADEM Admin. Code r. 335-3-16-.05(c))

- If the fuel firing rate (3-hour averaging period) for the Lime Kiln exceeds 110% of the fuel firing rate (3-hour averaging period) as measured during the most recent CO and NO_x emissions tests which demonstrates compliance with the applicable standards, the fuel feed rate shall be reduced, and the Permittee shall conduct additional CO and NO_x emissions test at the higher fuel firing rate. (ADEM Admin. Code r. 335-3-16-.05(c))

- If the O_2 level (3-hour averaging period) for the Lime Kiln is recorded as less than 75% of the lowest level (3-hour averaging period) as measured during the most recent CO and NO_x emissions test which demonstrated compliance with the applicable standards, the Permittee shall investigate the cause and initiate corrective action within 2 hours in order to increase the O_2 level (3-hour averaging period). (ADEM Admin. Code r. 335-3-16-.05(c))

<u>Recordkeeping and Reporting Requirements:</u>

- A written report of the excess opacity emissions, as defined below, will be submitted to the Department for each calendar quarter within the month following the end of the quarter. The report will include the following information (40 CFR 60.65):

    - The magnitude of excess emissions over 15% computed from 6-minute averages (data recorded during period of opacity monitoring system breakdowns, repairs, calibration checks, span adjustments, and zero shall not be included in the data averages).

    - The date and time of commencement and completion of each time period of excess emissions.

    - The nature and cause of the excess emissions (if known) and the corrective action taken or preventative measures adopted.

    - The date and time identifying each period during which the opacity monitoring system was inoperative (except for zero and span checks) and the nature of the system repairs or adjustments.

    - When no excess emissions have occurred and the opacity monitoring system was not inoperative or did not required repairs or adjustments, such information will be stated in the report.

- All the original data charts, performance evaluations, calibration checks, adjustments, maintenance records, and other information regarding the opacity monitoring system will be maintained in a permanent form suitable for inspection. (ADEM Admin. Code r. 335-3-16-.05(c))

- Records of all particulate matter emissions tests (Method 5) shall be maintained in a form suitable for inspection on site for a period of at least 5 years. (ADEM Admin. Code r. 335-3-16-.05(c))

- The Permittee shall maintain records of the lime production in the Lime Kiln in a form suitable for inspection for a period of at least 5 years. The records should indicate each month's production as well as the total lime production of each consecutive 12-month period. (ADEM Admin. Code r. 335-3-16-.05(c))

- Records of the weekly fuel sulfur analyses of the fuel blend delivered to the Lime Kiln shall be maintained in a permanent for suitable for inspection. (ADEM Admin. Code r. 335-3-16-.05(c))

- The Department shall be notified within 24 hours of any composite analysis that results in a fuel sulfur content greater than 3.0%. (ADEM Admin. Code r. 335-3-16-.05(c))

- Records of all visual checks, corrective actions taken, and follow-up visual checks shall be maintained in a form suitable for inspection and kept on site for a period of at least 5 years. (ADEM Admin. Code r. 335-3-16-.05(c))

- The Permittee shall record and maintain the maximum fuel firing rate (3-hour averaging period) and the minimum O_2 level (3-hour averaging period) during all time of Lime Kiln operation. (ADEM Admin. Code r. 335-3-16-.05(c))

Solid Fuel Handling & Storage System (Area 700)

Solid fuel for the lime plant is placed in a covered storage area from which it is loaded into the coal feed hoppers, conveyed through a crusher to the coal storage bins. From this point, the coal is pulverized and injected into the kiln system.

Only particulate matter emissions are expected from the sources associated with this system.

This area is comprised of the following source:

Source	Description	Control Device	Emission Point
FE 081	North Coal Feeder	None	FUG
FE 082	South Coal Feeder	None	FUG
CR 084	Roll Crusher	None	FUG
BC 085	Belt Conveyor	None	FUG
BC 086	Belt Conveyor	None	FUG
BC 087	Belt Conveyor	None	FUG
BN 866	Coal Storage Bin	None	FUG
BN 867	Coal Storage Bin	None	FUG
BC 870	Belt Conveyor	None	FUG
RL 871	Coal Mill	None	FUG
WF 868	Weigh Feeder	None	FUG
WF 869	Weigh Feeder	None	FUG

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, "*Major Source Operating Permits*".

- This source is subject to ADEM Admin. Code r. 335-3-4-.02 *"Control of Particulate Emissions – Fugitive Dust and Fugitive Emissions"*.

- This source is subject to the applicable requirements of 40 CFR 60 Subpart Y, "*Standards of Performance for Coal Preparation and Processing Plants*."

Emission Standards:

- No source associated with the Solid Fuel Handling & Storage System shall discharge to the atmosphere fugitives emissions greater than 20% opacity as required by §60.254(a) of 40 CFR 60 Subpart Y. *(§ 60.254(a) Subpart Y)*

Compliance and Performance Test Methods and Procedures:

- Instantaneous visible emissions observations (VEO) shall be conducted in accordance with Method 22 40 CFR 60, Appendix A (ADEM Admin. Code r. 335-3-1-.05).

Emission Monitoring:

- The opacity emissions from this source shall be monitored in accordance with the following (ADEM Admin. Code r. 335-3-16-.05(c)(1):
    - An instantaneous visible emissions observation shall be conducted at least weekly during daylight hours of the transfer points, feeders, and bins within Area 700.
    - If any visible emissions are observed during the initial visible emissions observation, corrective action shall be initiated within two (2) hours.
    - After corrective action has been complete, a follow-up instantaneous visible emissions observation shall be conducted in order to ensure that no visible emissions are present.

Cam Analysis:

- CAM does not apply to the units associated with this source since no control devices are used to meet any applicable emissions limitations.

Expected Emissions:

The maximum expected emissions, based on AP-42 emissions factors, are as follows:

Table 6

Pollutant	Allowable Emissions		Expected Emissions	
	(lb/hr)	(TPY)	(lb/hr)	(TPY)
PM	N/A	N/A	0.22	0.96

Recordkeeping and Reporting Requirements:

- Record documenting the observation date, observation time, emission point designation, name of observer, expiration date of observer's certification, observed opacity, and any corrective actions taken during each visible emissions observation shall be kept in a permanent form suitable for inspection. These records shall be maintained for a period of at least five (5) years from the date of generation and shall be made available to the permitting authority upon request. (ADEM Admin. Code r. 335-3-16-.05(c)(2))